Rec^d May 15
Ans — 22

Hilgard & Lesquereux

Wilmington Del May 10th 1867

My Dear Sir,

While at Wilmington, N.C. I got a negro to get some rootstocks of Nuphar sagittaefolia which, though not as good as I hoped they might be, I thought best to send you.

With this mail I send two or three specimens of Juncus Roemerianus which I got along shore near Wilmington N.C. In the multiplicity of things to attend to before I left home I forgot to look at your description of this plant and consequently did not think of the unisexual character of some of the specimens you examined. However ~~and~~ during the little time I had I got a considerable number of specimens (say 50) any or all of which are at your service to examine, or keep if perchance you should need them for your sets. They are not all as complete as regards roots &c as the specimens sent.

Happening some time since to be near an old Isoetes station I sent a few specimens for examples of the younger stage of the plant. At that season I found them exceedingly liable to break open at the centre of the plant between the lobes of the rootstalk.

Ever truly
Wm M. Canby

The Dionaea which I went principally to get I found too young on account of a very backward spring. Not a single specimen was to be found in flower.

Rec- May 30
Ans same day

Wilmington May 27th 1867

My Dear Sir,

I saw Nuphar sagittaefolia growing in many places in Cape Fear river and the bayous which intersect the marshy shores opposite the City of Wilmington, N.C. I did not however notice it in ponds or still water. In the tide water of course the depth varies considerably but at low water I should say it might be from 18 ins. to 4 feet. It is quite common in such places and was well in flower when I was there. I think the roots sent must be fully the average size. The long wavy edged leaves (reminding me of those of Potamogeton crispus) are very different from those of advena which I did not see there at all. The long leaves always float on the water as soon as open but I saw nothing which could ~~be~~ at all

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be taken as a transition state between the two species. I should think them very distinct. I can send you a specimen of flower and leaf if you desire. I don't know how to reach the negro by letter nor of any one who could get the roots, but am in hopes I may be able to get down again later in the season.

I got a few specimens of the enclosed Juncus: when you have occasion to write again will you please give me its name?

Ever Truly Yours

Wm M. Canby

MIS
GEORGE ENGELMANN PAPERS

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Rec April 2d
Ans — 7th

Wilmington Mar 30th 1867

Nuphar sagitt

My Dear Sir.

As requested in your letter received this morning I send Mr. Bootts specimens of Isoetes from Horn pond. As the two parcels were gathered in different localities of the same pond I send his letter also which will explain the circumstances. I only send those specimens you ask for presuming that you know sufficiently of the other plants mentioned in his letter, though all are at your service if you need them.

About the end of next month I think of going to Wilmington N.C. principally to get Dionaea, but of course will pick up any & every thing that I can. Have you any suggestions?

A month ago I was at Springfield Ill. and thought seriously of going to St. Louis where I should have wished to pay my respects to you in person; but the bad weather and unpleasantness of travel hurried me home.

Ever Truly Yours

Wm M. Canby

Please send Bootts letter back with the specimens but keep all as long as you need them.

Wm M Canby

Recd June 11th
Ans Aug 16

N. sagitt. only in tide water?
or in ~~floating~~ running water?

Wilmington. D. June 6 1867

My Dr. Sir,

I enclose as per request a couple of flowers of Nuphar sagittaefolia, Ph. I do not think that the water of Cape Fear river at Wilmington N.C. is even brackish, and as I before remarked I did not see the plant in any pond or lake of perfectly still water. It grew in the river (near the shores) and in the sinuous channels connected with it which cut up the low marshy flat called "Eagle Island" opposite the city. I never saw N. advena growing with it; but saw + in one place (and the only place I saw advena in that vicinity + if I remember rightly) N. advena

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Nymphaea odorata & Limnanthemum trachyspermum growing in company in a small pond of nearly still water. Some of the leaves of the latter plant were 6 to 7 inches in diameter and I took them at first for those of Nymphaea. A branch of the Cape Fear river is crossed by the R.R. some 15 or 20 miles North of Wilmington and I noticed N. sagittaefolia growing here in the same way as below. Torrey & Gray quoting D.C. say "rhizoma erect"! but I think this must certainly be a mistake.

If I get down there again I will try to remember to look up these matters.

Ever Truly Yours,
Wm M. Canby

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Recd June 17
Ans Aug/16

Wilmington D. June 13 '67

My Dear Sir

I write a very hasty note explanatory of a lot of Isoetes sent this morning. They were collected yesterday (12th). The smaller I. riparia from the river shore: you will notice the sand full of old spores. The other which I suppose is I. valida is from a new locality — a little pond 20 by 10 feet and 1 to 2 deep: I judge it to be the above from the smaller spores; the forwardness of the plant — the keeled leaves and the size. About 6 inches of the leaves out of water which is now probably higher than usual. I think there is plenty of it & will collect more.

Truly Yours
Wm. M. Canby

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Recd Aug 14
ans Aug 16

Wilmington D. Aug 10th 1867

My Dear Sir,

I have just returned from a trip to the Pocono Mountains Penn: made in company with Profs. Green & Porter of Easton. In the same mail with this is placed a package containing two lots of Isoetes, gathered on this trip; of these No. 1 is wrapped about with a twine string to distinguish it from No. 2 ~~wh~~ in which the specimens are loose. No. 1 was gathered in "big lake" near the summit of the Pocono ~~and g~~ grew on a sandy & stony bottom the plants coming up between the crevices of the stones which were generally large enough to weigh

8 or 10 lbs. When gathered it was growing in a depth of water varying from nine inches to 1½ feet. Judging from the depth of the outlet of the lake the plants would still be under water if ~~there was~~ in consequence of dry weather no water flowed from the lake and Dr. Greene thinks they are always submerged. The specimens of No. 1. are larger and stiffer than No. 2.. The latter grew in Moses' Lake, a smaller body of water than Big lake, and of lower elevation as I suppose. The plants here grew in much the same kind of bottom as in the other case but rather less stoney. They were in deeper water and I should suppose must always be submer~~ged, as the~~ outlet from the lake is quite small

and shallow (say 2 ft across and the water 2 inches deep.) In neither case were the plants gregarious, but mostly single or two or three in a place. They were not very plentiful. Lobelia Dortmanna & Eriocaulon septangulare were the companions of these Isoetes, and in both lakes were found the Nuphar with floating leaves and petioles in shape like the fronds of Isoetes valida (cross section) of which you have heard from Mr. Durand.

I shall be glad to have your opinion of these plants.

Ever truly Yours,

Wm. M. Canby

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rec'd Aug 29
Ans Sept 4

Wilmington Aug 26th 67

Dear Dr. Engelmann

I am glad to hear that the Pocono Isoetes is the echinospora var Braunii I enclose one or two specimens with label and would send more if I had them. Being the only one who waded after them and as time would not allow of making a large collection and the division of them with Drs. Porter + Green did not leave me many I can do no better.

I have collected some specimens of I. valida from the original locality where it is scarce and more from the new one where it is more plentiful. I noticed the difference in the velum in the latter and was somewhat doubt-

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feel of the plant; there is however one peculiarity of the var: which Prof. Porter has also noticed and that is in the dark satiny lustre of the leaves.

I expect to start tomorrow for Salisbury Md. and hope to get a quantity of saccharata.

I ought to have said that I am so far from the Pocono that I may not get there again; but Porter & Green frequently go there, and will doubtless get more specimens sometime.

I have still most of the specimens of Juncus Roemerianus collected near Wilmington N.C. and will be glad to send them and am glad to to hear that your Herb. Juncorum &c is under way. I dont think Dr. Chapman from what I hear has succeeded in getting the Juncus Roemerianus. By the way in ~~July~~ June I found J. dichotomus plentiful in the pine barrens about Atsion N.J. and have but little doubt it will eventually be found in L. Island.

As to Nuphar sagittifolia Walmonia I do not think it is a var: of N. advena, The flowers may be much alike but the leaves are very different, being thin very long often 18 inches crisped on the edges always floating with very long slender petioles which if my memory serves me are terete while those of N. advena are semi-cylindrical. I believe I only saw it in tide water in the Cape Fear River and saw no (not the least transition in the leaves or habit towards other species. I will look ~~into~~ at the specimens in Phila.

My Dionaeas are doing exceedingly well and are very interesting in their habits. I have repeatedly fed them with fragments of beef which they dissolve by the secretion of a "gastric fluid" and as I suppose absorb. I am still continuing the experiments and should be glad for references to anything which has been published on the subject.

Many thanks for Wolffia arhiza which is an interesting discovery.

Very truly Yours

Wm. M. Canby

Recd Nov 11th

Wilmington D. Nov 7th 1867

My Dear Dr. Engelmann,

Yours of 2nd inst just in. Yesterday while in Phila. I saw Mr. Smith who told me of his plan for sending a bundle out to you. Do you know as yet whether you will want any of the Juncus Roemerianus from Wilmington? J. Setaceus, I also got there this fall but in too advanced a state. The Isoetes you shall have. Please write immediately on rec. of this, so that I may know whether or not to include the Juncus.

Of Vites, we have the three commonly received species, Labrusca, cordifolia, & aestivalis. I confess not to have examined them closely at all seasons, but find no difficulty in recognizing them at a glance, and have noticed no variations worth speaking of, except in color & taste of grapes of V. Labrusca. On the E. Shore of Md. commences V. vulpina, but I have never seen it in flower or fruit. It would now be much to late to get the fruit of any of our grapes.

Mr. Tatnall shall have your message. I have found him a hard customer to get a photograph out of.

In Delaware this fall I came across Gymnadenia nivea, & Rottboellia rugosa.

Could you conveniently spare me a specimen of Isoetes lacustris? it is the only one of our Northern species which I have not. And can you without much trouble give me a ~~com~~ short comparative diagnosis of the Californian Isoetes? In a set of Bolander's plants is a single specimen which I should much like to be able to name.

Very cordially
Wm. M. Canby

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Rec Nov 23d
Ans Dec 13

Wilmington Del Nov 19
1867

Dear Sir,

I have sent to Mr. Smith a package of plants for you containing principally Juncus Roemerianus and Isoetes Engelmanni et vars & I. riparia; but also a few others which I thought might interest you or about which I felt uncertain. Among these are Coreopsis gladiata? about which I cant be quite certain having nothing good enough to compare it with. A plant from Weldon, N.C. the name of which I ought to know but dont and have not books here to find out. Equisetum robustum? rather than laevigatum. Solidago from E. Virginia which I suppose to be a variety of S. Canadensis but differs in the small smooth leaves same color both sides, smaller flowers

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on longer pedicels smoother stem &c. The plant is more dwarf than the usual S. Canadensis.

Trifolium incarnatum?

An Isoetes, from Felton which seems to differ somewhat from I. Engelmanni, The latter I found at Eastville in the lower part of the E. Shore of Va.

Many thanks for the specimen of Isoetes Lacustris which I value much and for the Marsilia. You did not send me M. salvatrix or pubescens nor any European species of Isoetes, except the one above mentioned.

I think it must be much to late to get fruit of Vitis cordifolia but I will try. It is never brought to market but the fruit of Labrusca often is. The berries of this vary much in color and taste, but I have never seen any specimens which seemed doubtful.

I think Dr. Robbins has been very ill which may account for his silence.

I have very few almost none in fact of Dr. Parry's plants and should be glad indeed to possess some.

Very truly
Wm M. Canby

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Rec Dec 23
Ans Febr 7

Wilmington Dec. 19 1867

Dear Sir,

I have your favor of 13th inst. and am obliged for your opinion of several plants. The Solidago is S. tortifolia. Ell. As for the Coreopsis I should have thought it C. angustifolia if the stem had not been uniformily terete wh. Chapman says is the character of C. gladiata.

I am really beginning to think that Nuphar sagittaefolia may after all be but an extreme var. of N. advena. In collecting the latter during the past season from several localities including the mountain one where it has floating leaves sometimes with closed sinuses there seems to be such a degree of variability in the plant that it might

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even stretch to the apparently different form of S. sagittaefolia.

Juncus Roemerianus was collected on the sandy beaches of the sea coast shore about 7 miles from Wilmington N.C. about the 10th of May 67. But few plants grew with it or near it but there were some clumps of Iva frutescens & Baccharis halimifolia, and on a slightly higher point of the beach one or two live oaks.

I got yesterday from Mr. Louis Foote of Detroit some specimens of Vitis (leaves only) marked V. cordifolia which appear quite different in serrature &c from ours. I suppose they belong to what Gray calls Var. riparia.

Very truly Yours
Wm M. Canby

You have doubtless heard of the deaths of Drs. Dewey & Sartwell.

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Recd Febr 21

Wilmington Febry 17 1868

My Dear Dr. Engelmann,

On returning from a visit to Dr. Gray I found your favor of 17 inst. awaiting me with its very acceptable inclosure of Wolffiae for which please accept my thanks. As soon as time is afforded I must look into them in order to be able to distinguish ~~[illegible]~~ them. I presume the W. Braziliensis, var, is what was thought arrhiza.

As for the various plants you mention I must and shall try to do the best I can to collect and notice, and some opportunities more than common may be afforded me; nevertheless I see I shall be "up to my eyes" in work and occupation and

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may not be able to do it as thoroughly as I should wish.

How pleasant it will be for you to revisit the old world and come in contact once more with the active and well cultivated scientific mind of Europe. I wish you bon voyage with all my heart and a pleasant sojourn abroad. Dr. Gray told me that he expected you on next month preparatory to sailing.

I might just remark what perhaps is no news, that in the 2d ed. of Flora Cestrica, (published in 1835 I think) Dr. Darlington's descriptions were prepared with the greatest care, and are commonly exceedingly reliable. He told me that in all cases where he mentioned feet or inches they were obtained by actual measurement, and were not guessed at. I have paid so little attention to the grapes that I cannot say certainly whether V. aestivalis or V. cordifolia is the stouter. These with V. Labrusca are I apprehend all the species we have in this immediate vicinity. A little care and attention will however make this certain or otherwise.

Ever Truly Yours

Wm M. Canby

Recd July 4

Wilmington Del.
Ap. 27 1868

My Dear Dr. Engelmann,

I hope this will not be too late to reach you at Cambridge, though I do not know the time you propose to sail for Europe. But I must make the effort, already too long delayed by unavoidable engagements, to thank you before you leave for the set of Junci and the specimens of other plants accompanying it. The former I can truly say was unexpected simply because the few specimens I sent for your use did not entitle me to your favor in this way; and I fear some one more useful to you, and more worthy of the gift may suffer in consequence. But I assure you I am truly grateful for all and hope to be able in future to show it by any aid I may be able to render, by furnishing specimens of or notes on plants you may wish to investigate.

In looking at a plant of Juncus militaris, Big. collected last August on Pocono Mt. Penna. I find traces of the capillary leaves which leave no doubt that they grow on the plant of that region, though perhaps not so copiously as in the N.E. Specimens.

Again I think from what I saw of Juncus repens, Mx. in Maryland, that it is not an annual plant. The ground where it grows is matted with it as if it grew from a multitude of running root stocks. While these rootstocks thus live over winter and produce plants for the next year, the old plants may not and probably do not grow more than one year. If opportunity offers fuller observations will be made on these points.

Wishing you a prosperous voyage and pleasant sojourn in Europe,

I remain
Gratefully Yours,
Wm. M. Canby

The pamphlet came safely also for which many thanks.
WMC

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Recd Jan 19th
Ans Febr 12

Wilmington Delaware
Jan 15th 1870

Dr. Geo. Engelmann
St Louis Mo.

My Dear Sir,

I have your favor of 8th inst. and now enclose a few specimens of the Georgia Isoetes. On the base of one at least are a few old spores which will, I hope, enable you to distinguish the species. I regret very much that you did not get the letter I wrote to you from Atlanta which contained the best specimens I had dried - the ripest I mean; and also that the lot of live plants were not taken care of to await your return.

I shall try to send you before long a selection of Southern plants which will include a new Pachistyma from the Mts of S.W. Va.

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I shall not be able to do much Botanical work for this year as other engagements will take up almost all my time.

In Florida I found Pinus Taeda with often two leaves to the sheath.

I did not get to see Drs. Chapman or Saurman but understand that the former has been deprived of his position as Collector of the Port of Apalachicola and is very desirous of obtaining a Natural History Professorship in some Northern College.

Very Truly Yrs

Wm M. Canby

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Recd Febr 11
Ans Febr 12

Wilmington Feby 8th 1870

My Dear Sir,

Today or tomorrow I shall send by express a small package containing specimens of Southern plants among which I hope you may find some to interest you.

Some weeks since I sent you the best specimen I could muster of the Stone Mt. Isoetes. I have not heard from you since and know not whether the letter reached you though I hope it did.

Hoping to hear from you soon
I remain Very Truly Yrs

Wm. M. Canby

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Rec Febr 18
Ans same day

Wilmington Feby 15th 1870

My Dear Sir,

I have just received your favor of 12th inst. and am glad the specimens sent please you and that so many are desiderata.

Pinus australis, I will try to look up and send a specimen with fem. fl. they are "apical". The cones are deciduous. I have no cones now. I had some good ones from Wilmington N.C. but while I was away from home the mice got at them and ruined them for the seed.

I did not find any thing which I could distinguish as P. serotina although on the look out for it.

Taxodium dis. All the specimens which I saw in fl. were at Hibernia which is on the W side of the St John's river 25 miles above Jacksonville. Uniformally they flowered before the leaves appeared. But if I remember rightly the catkins remained a little while after the trees leaved. I cannot be certain of this latter though as your Texan specimens appears to be just in flower or a little past it?

The Stone Mt. Isoetes in habit and appearance was very different from the Md. one the former very gregarious covering thickly the bottom of the pools; & was different in color & texture being of a light bright green the leaves erect. The Md. sps. hardly ever growing so as to touch each other dark ol. - green leaves very spread.

ing. I enclose some specimens of I. saccharata gathered last fall.

Torrey, Gray, & Curtis all say ~~the~~ decidedly that the Va. Pachystima is a sp. nov. The latter is to name and describe it. I found it 11 years ago and probably your specimen came originally from me through Mr. Tatnall.

Yrs truly

Wm M Canby

12.2 37.3
37.3

49.5

24.75

Rec Feb 26
Ans March 20

Wilmington Feby 22 1870.

My Dear Sir,

I am very much gratified to find by your favor of 18 inst. ~~that~~ just received that you consider the Stone Mt. Isoetes a new species. I felt confident it was distinct from any of our northern ones; but having never seen the Southern ones (I. flaccida & I. Chapmani) I did not know but that it might be one of them. Before your letter came today I was comparing I. saccharata with this new one having found a specimen of the latter with some old macrospores and saw how distinct they were. Like yourself my recollection of the macrospores of I. sacc. was that they were not so much lichen-crested as as they appear to be — but on making an re-examination of the original specimen I found them as described in your note.

Now to answer some of the questions or doubts about I. granulata (a very poor name) the water in which they grow could hardly be called stagnant. Of course in such a locality it can only be supplied by condensation. The alternate condensation, and evaporation by the sun appear to be so rapid that the water does not become stagnant. I made particular inquiries of persons living in the neighborhood and the universal testimony was that they had never seen these pools dry — which considering their shallowness (perhaps never over three inches) is remarkable enough. If this be so it answers also the note "submerse — (in spring only?)" and also perhaps the next — "Stomata nulla ?)"

MISSOUR
GEORGE

The plants were gathered about the sides dle of May (or perhaps the second week in that month).

I intended to say that the water of the pools appeared very pure. I think there were no Confervae in it.

Whatever may become of the plant as a species the locality is certainly a remarkable one, and Stone Mt. must rank as an interesting botanical district. I call to mind no less than three species of plants found on this little mountain which are not known elsewhere — this Isoetes, Rudbeckia Porteri, and Quercus Georgiana; and many other rare and interesting plants grow there.

I have a number of specimens of Callitriche and Lemnae from the South which I wish to send you some time for identification.

Yours Very Truly

Wm M Canby

Over

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I am more sorry than ever that the nice bundle of live plants of this Doctor, I sent to Mr [illegible] were not preserved.

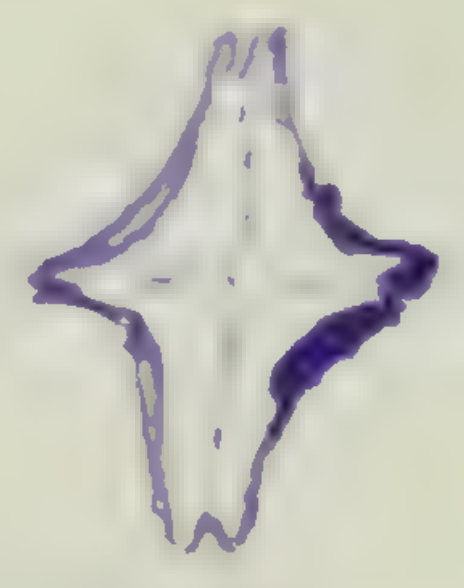
I enclose some more of P. saccata to make up for those broken they were gathered last Sept.

Rec^d April 2^d

Answered
to Ravenel

Wilmington March 30'70

My Dear Sir,

I send by mail today sundry Southern specimens of Lemnae and Callitriche for determination. As far as I can make out all the latter are Austini though the fruit seems to differ slightly from that of the only authentic specimen of this species I have (one of Austin's) in that it seems to spread out more laterally near the base, a cross section showing somewhat like this  which is very roughly done.

I shall be very glad to have any specimens of Lemnaceae you may choose to send. You did not write of them before. Isoetes Malivernaina would also be exceedingly acceptable.

As to stagnant the *real* meaning of the word is undoubtedly still - not flowing - yet to the popular mind I think there would seem to be contradiction in such a sentence as "pure limpid stagnant water", though it is a perfectly correct one.

I don't know any one word to designate *pure* stagnant water from *putrid* stagnant water.

Very truly Yrs

Wm M. Canby

Recd Nov 14
Ans. Feb 16

Wilmington Nov. 10th 1870

My Dear Dr. Engelmann

I was glad to get your very respected letter of Oct. 19th and to know the Callitriche to be C. peploides Nutt.

It is a pity the specimens of the Lec. Society never came to hand. Mr. [illegible] of N.J. went to the locality last June at my request but found nothing.

I am just now undergoing the torments of moving and have had no time to look of Pinus rigida. It grows near here in quite a wet piece of ground & I remember going to it once to see if it could not be identified with P. serotina but judging from the shape of the cones I could only make it out like P. rigida. It is a taller tree than those on the hills south of us; but South of here in lower Delaware & Maryland it is a fine large tree nearly as large as P. Taeda and the timber is considered valuable. As to the opening of the cones I cannot speak. If I can only find time I will make observations and will be delighted to oblige you as well as that excellent botanist Mr. Ravenel by sending him branches as you desire. But I fear I shall be too busy this fall.

Very truly Yrs

Wm. M. Canby

L GARDEN
N PAPERS

Rec'd April 25
an May 5

Wilmington Ap 22 1871

My Dear Dr. Engelmann

I have finished moving and have a "Sanctum" at last but am becoming so tied down with outside business of various kinds that often for weeks I cannot look into botanical matters at all.

I know nothing of Yucca hardly. In my Herb. there are but three species represented & that very poorly indeed.

Yucca angustifolia stem-leaves & flowers - from Hall & Vasey
Y. filamentosa from Md. leaves (very filamentous,) & last years capsule or two — and
Y. aloifolia - Wilmington N.C. leaves only; these narrow very sharp-

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pointed, serrulate.

In pine woods in Florida I have seen a species with broad leaves like Y. filamentosa except that the leaves had no filaments. Unfortunately I failed to get specimens.

Y. gloriosa (I suppose) is common there as a hedge plant.

I believe that is all I know as to Yucca. I have never seen any of them in flower in a natural state.

I do not know anything of Chapman. Did not even know he had left Apalachicola.

I congratulate you on your new Pinus Elliottii. It seems strange that it should be so long over looked.

So far as I have observed the aspect of the whole tree as well as the size of the cones of P. rigida vary considerably

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I cannot remember that I have
ever seen it with old cones
closed (except when very wet) As
to P. serotina I am in statu
quo. I have nothing that I
suppose to be true but one
cone sent me by Mr. Curtis
(by the way what has become of
him?); this was shorter and thicker
than any cone of P. rigida I
ever saw and was closed. I think
it came from Society Hill. S.C. I
have seen in Md. cones of P.
rigida so large that at first
sight I took them for those of
P. Taeda

I never heard of the "Slash
pine" you mention; and I am
sorry to say I do not know
a single person in E. Va or N.C.

This is a most unsatisfactory
answer to your letter

and I wish I could do better. If ever opportunity offers I will pay attention to the subject, as I know of.

Very truly yrs

Wm M. Canby

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BOTANICAL
GARDEN

Rec'd May 19
Ans — 29

Pinus Elliottii

Wilmington May 15 '71

My Dear Dr. Engelmann

Your favor came duly and afterwhile the cones also.

First in regard to what you suppose may be your Pinus Elliottii. I will send a little fragment of a branch cut from my only specimen and also an old cone (fortunately I have two of these) and I will enclose in this a sterile catkin. If these are not sufficient I will send you my specimen. When you wrote before I did not think of this pine at all. Now you shall have the whole history. [illegible] in Chapman

that he supposes P. glabra to
be not uncommon in the low
hammocks of that State (Florida)
I made some search for it in
the swamps near Hibernia, Fla.
(This place is on Flemings island
in or on St Johns river about
25 miles above Jacksonville).
In this I was unsuccessful.
But in the low swampy spots
in the Pine barrens I found these
pines. Noticing that they frequently
had two leaves to the sheath I
was struck with this, and gathered
quite a quantity of branches,
having sterile catkins. I did
not get, so far as I know,
a single female flower, nor do
I remember to have seen any
cones on the therefore deciduous! trees. You will see
by the one I send that it was
probably a last year cone. I

gathered a few of these on the ground. Upon looking into Chapman I found that he described Taeda as having often two leaves to the sheath and so I rather rashly concluded that this pine was a var. of that. I distributed it quite extensively under the printed label of "Pinus Taeda L. (~~leaves~~ Sheaths often two-leaved) Hibernia, Florida, March 1869." I sent some to Josiah Hoopes and he may have two specimens and if so would doubtless spare you one.

You will see that the leaves sent you (taken at random or rather continuously on one sides of the branch) are almost all in twos. Supposing it to be a var. of P. Taeda and wishing to keep a characteristic specimen, I selected one for my-

self strongly marked in this way.
But the trees varied greatly in this respect, many having the sheaths almost uniformly 3 leaved. The species was quite common just then (and most likely elsewhere) in these swamps or rather ponds in the pine barrens; P. australis being its neighbor on the drier land. I remember thinking it strange that P. Taeda - which is a rather dry ground tree in Maryland should only grow in swamps in Florida! But many plants change in this way in widely different localities. If you had not been in Europe at the time of my return home you would have had a fine specimen of this as

Rec^d May 19

I could then leaves, sent. I should judge the heights of the trees to be 60 to 80 ft. Bark so far as I can remember much as in P. Taeda - perhaps a little rougher and darker.

I have seen in the South what I took for P. rigida but have no specimens. The fact is that in my journey there I wished to gather as many specimens as I could of plants desirable for exchange with my friends and thus when I saw what I supposed was the same as we had here I neglected it knowing that I should be well loaded at best. I will send with the cone already spoken of an old one wh. I thought might perhaps belong to a P. serotina tree and also a few leaves of the same. But I suppose them to be only rigida. I am surprised at the P. Serotina cone you send. The true one I mean. It looks more like some I have seen that I supposed to be P. rigida. I must keep a lookout for this. For at present I really know nothing about Serotina. The cone I send was from near Hibernia

My Maryland Yucca filamentosa is the true plant according to your description and figure. I suspect I made a mistake in writing gloriosa instead of aloifolia as a hedge plant in Fla.

Very truly Yr

Wm M. Canby

Recd June 21st

Wilmington June 17 1871

My Dear Dr Engelmann,

Your esteemed favor of 29 ult was duly received. I am much gratified to find the Florida Pine is P. Elliottii Engelm.

I delayed writing hoping to make some observations on such specimens of P. rigida as are to be seen near here. They are scanty enough just in this neighborhood. P. Taeda is not found so far as I know within 30 miles of here. I have not been able to examine either of these lately. I don't think though that our swamp rigida is ~~ide~~ entirely identical with the upland plant. So far as I can remember the whole ~~[illegible]~~ tree as well as the

...CAL GARDEN
...ENGELMANN PAPERS

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cones are much larger.

I have not observed any difference between the swamp or aboriginal Taeda and the old field tree. Both this and (swamp?) rigida are valuable trees 100 to 150 miles South of this and are much cut into boards by local sawmills, and very fine logs (sometimes sixty or seventy feet long) and from one & one half to three feet diameter) are sent north to the shipyards. I am so much engaged that I fear I cannot get down to these localities but if I do will pay particular attention to the Pines.

I just remember ~~that~~ to have thought when "down below" that the cones of P. rigida there were extraordinarily large — almost coming up to those of P. Taeda.

Taeda & rigida both hold

their corms for several years - Two
to three or four I should say -
perhaps even longer in some cases.
Writing of the bark of 'Pinus
Elliottii' from remembrance & I may
have been mistaken about it.
If you know of any botanists
going up the St. Johns river in
future I could direct them where
to find it without fail.

Very truly Yrs
Wm M. Canby

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Rec^d May 23^d
Ans Sept 17

Wilmington May 20 1872.

My Dear Dr. Engelmann

I send a package by mail containing a specimen of Opuntia collected on the sandy shores of St. Johns river Florida near "Magnolia" in March 1869.

It got to the bottom of a box in coming home from there, and was not discovered until a few months since - say two years from the time it was gathered. In that time a joint some two feet long & half inch wide had grown and with the base of the old joint was alive at the time of discovery.

The plant was upright some two or three feet high. It had ~~fruit~~, if I remember aright, smooth fruit. I lost those I collected.

Can you give me the name?

Do you join the Botanical Party to Colorado and San Francisco this summer?

Very truly Yours,

Wm M. Canby
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Recd June 25

Wilmington June 21 1872

My Dear Dr. Engelmann!

Thank you for your note on Opuntia.

I cannot go to California nor Dubuque either in August. Bound to stay at home to my regret.

I know nothing of the ~~fe~~ mode of fertilization of Yuccae. I have none growing and know of none in this vicinity. The nearest wild is 120 miles from here south — Y. filamentosa.

With best wishes

Yrs very truly

Wm. M. Canby

I got specimens of Pinus pungens at Harpers' Ferry the other day.

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Recd Sept 30
Ans Oct 5

Wilmington Sept 26 1872

Dear Dr. Engelmann,

You remark in Gray's Manl. page 538 that Juncus setaceus Rostk. is "doubtful if in our district". The specimen enclosed was gathered at Snow Hill Maryland (Eastern Shore) on the 12th inst. I presume there can be no doubt as to its being the species.

I also enclose a specimen of Spiranthes simplex, Gr. which having recently examined in a living state I think is quite distinct from S. gracilis. Big.

Very truly yours
Wm M. Canby

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Recd Octob 21
ans same day

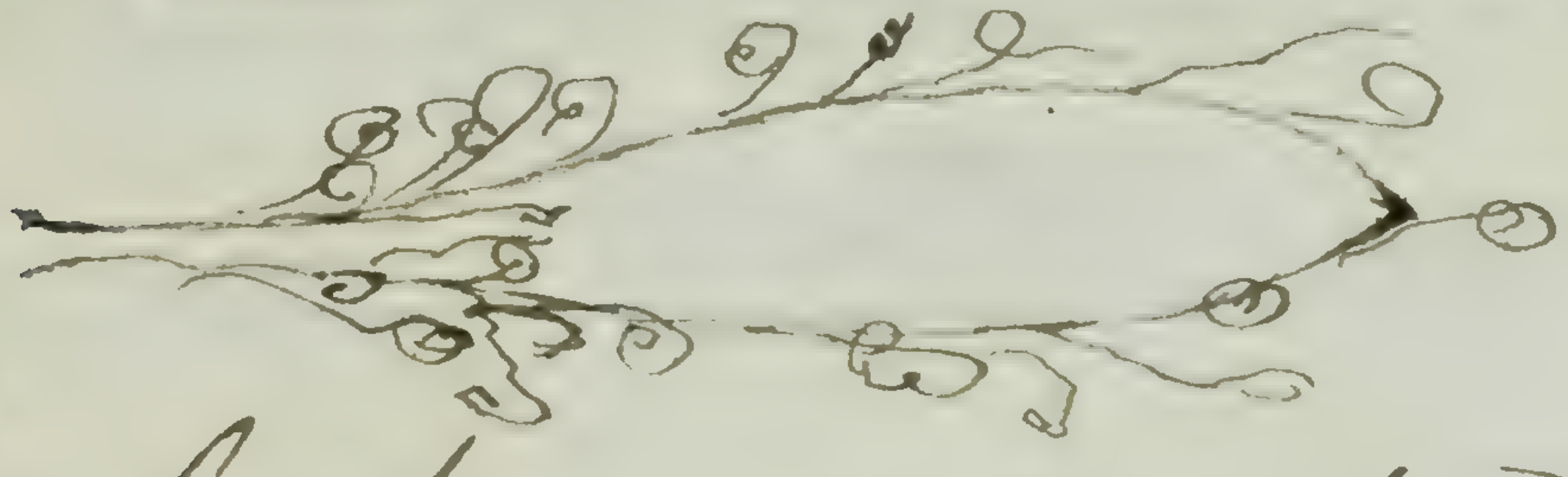
Wilmington Oct 17 1872

My Dear Dr Engelmann,

I note what you say about Yucca in your last.

My collection is extremely deficient in specimens. They may be summed up as follows

1st Plant with flowers and fruit of Y. angustifolia, Ph. most of the seeds perfect.

2° Leaves and fruit of Y. filamentosa L. the true plant as I suppose. Leaves somewhat obovate lanceolate, thus  scarcely any seeds perfect. collected near Salisbury Maryland.

3rd Leaves only of what I have taken for Y. aloifolia L. collected near Wilm. N.C. The leaves are rigid, spine pointed and rough on the margins and narrow lanceolate in outline.

Besides these I have seen in Pine woods in Florida a plant allied to Y. filamentosa, having narrow-lanceolate leaves which are quite soft and flaccid (not rigid) and which are quite filamentous. I have no specimens.

I do not suppose that what I have will be of any service to you; but if you think so I could easily send them to you. As I have no other specimens I should like to have them again.

It would seem that Juncus setaceus must require a very long season to mature its seed. This may be the reason that it is not more common in its most northern habitats.

Very truly Yours
Wm M Canby

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Ans. Nov 15.

Wilmington Nov. 12 1872

My Dear Dr. Engelmann,

You are very welcome to keep both leaf and capsule of the Yucca I sent you, and I am glad it was of service and only wish for my sake and yours that I had fuller specimens.

I noticed the depredations of the moth, and have been much interested in your observations in the Torrey Club Bulletin &c.

I wish you could feel it in your mind to take up the asters and give them a thorough overhauling.

Very truly Yrs

Wm. M. Canby

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Rec'd ~~June~~ 7
Ans June 7th

Wilmington Del June 5th 1874

My Dear Dr Engelmann

I am glad the specimens came all right.

Parry wrote me a short time since that he was having a splendid time at St George Utah. I hope he may complete a fine collection.

By the Torrey Botanical Bulletin directory I see Fendler is settled at Seaford in this State I have been intending to write to him to claim Botanical relationship.

You never told me about Chapman's new Sedges. He has got extremely shy of Northern men having become soured at his treatment by the Government and is now extremely bitter in his feelings: so much so that he gave up correspondence with Prof Gray & others,

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+ I believe he still oscillates between Apalachicola, Fla, & Rome, Ga. I had a letter from him last summer, enclosing fragments of a new Gerardia.

Yr very truly

Wm M Canby

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Rec: June 24

Wilmington June 20 1874

My Dear Dr. Engelmann

Probably by this time you have heard from Fendler.

As soon as I rec. yours of 7th inst. I put a card in the mail for him asking him to call. This he did a week ago and on Monday last we had a botanical tramp together.

I hope he may find inducements to settle in this neighborhood.

By the way while I think of it, I lately got some specimens of Berberis Canadensis from Va. which puzzled me somewhat. Gray (in Manual) says of B. vulgaris that the short petiole is pointed and gives a mark of exclamation ! as if unimportant; but I find this to be the case with B. Canadensis and also with all my specimens of section Mahonia!! Again in a cultivated specimen of B. vulgaris I have in my yard the petals are notched as much as in the native species; and ~~in~~ some Virginian specimens are scarcely to be distinguished from B. vulgaris in any particular except the fruit wh. is smaller an oval instead of oblong. I really feel inclined to adopt Dr. Hooker's view of our plant being but a var: of the other.

Very truly Y

Wm. M. Canby

Recd July 15th
Ans Oct 26

No 1101 Delaware Av.
Wilmington Del
July 11th 1874

My Dear Dr. Engelmann

I am much obliged for your note which shall be used discreetly and then destroyed.

Mr. F. is bound to go through the printers hands. His whole heart is set upon his having his book published. From what he has told me I suppose it will cost him between 3 or 4 00 dollars to get out 300 copies. I have not read the M.S. and would be no judge of it if I had, but from his talk I cannot suppose that it will prove him to be wiser than his generation.

I do not know that any examination of the amt. of nitrogenous matter in the animal eating plants has been made. I wanted to ~~do~~ have it done some years ago and then lately; and especially a thorough analysis of the fluid in the tubes of Sarracenia variolaris a phial of which Mellichamp sent me.

But the expense is too great. I was told that a first class man (it would be useless unless well done) would charge $500,00. Prof Gray has just sent me some late letters of Darwin who [illegible] says that "Pinguicula (vulgaris) is an excellent digester of fibrin, albumin, meat, &c." and "that if a row of flies be placed near the margin, the edge of the leaf in the course of 2 or 3 hours turns over so as to bring the secreting and absorbing glands in contact with the

~~with the~~ upper as well as the lower surface of the flies." Also "that the leaves certainly absorb nutritious matter from little leaves and seeds which are blown into them".! What do you think of that for an omnivorous plant!

I meant to say that I have got Fendler to poisoning my plants. He will get some little in that way to help him out with his printing bill.

Very truly Yours
Wm. M. Canby

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Rec Nov 4

Wilmington Oct. 31st 1874

My Dear Dr. Engelmann

I have just received yours of 26th inst with enclosure for Fendler who has purchased a small property in this place. I have sent him word by postal to call for his letter.

I am very glad you had such a splendid time in Colorado. Parry wrote to me to come out at that time. But instead of that I was literally forced into politics and for two months have been doing almost the hardest work I have ever done and shall get no thanks for it either. I shall get out of it as soon as

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Rec'd Nov 4

~~soon as~~ I honestly can; but in the mean time "Botany" has to take but little thought and less attention.

But you will make many things clear for us which have been confused, and being among the growing plants is better than examining their "dead and dried remains".

What I supposed Abies grandis I collected on the trail up to "Pike's Peak" at an elevation I suppose about 1500 to 2000 ft higher than Colorado City. This I suppose must be your A. concolor though I have never seen a description that I know of. Hall sent me a specimen of what he called A. grandis with smaller cone and much shorter leaves from the "sub-alpine region" which may be the true plant and resembles his No. 479 P. Oreg. = "A. grandis forma lasiocarpa". I have also a specimen in leaf only got near the Yosemite Valley wh. Bolander said was A. grandis, but it has still longer and proportionally narrower leaves than the Pike's Peak specimen. They are sometimes 3 inches long.

I have specimens of the following Colorado conifers

A. Engelm
Junip. occid. – & Comm.

Pinus aristata, P. flexilis, P. edulis, P. ponderosa, P. contorta — Abies grandis? A. concolor? A. Menziesii, A. Douglasii Juniperus from Colorado City wh. I supposed to be J. occidentalis but according to Porter's Flora must be J. Virginiana var. I have also cones of Abies Engelmanni. The other two of your 13 I have not, and do not know, unless they be Juniperus communis var., and your var. latifolia of Pinus contorta.

I have a new locality of Isoetes

Jacchurata some 30 miles distant from the old one. I enclose some and can send more if necessary, or if you wish them.

Ever truly Yours

Wm M. Canby

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